## CLAIMS

5

- A method of controlling traction in a vehicle having at least one non-driven wheel speed sensor, the method comprising:
   detecting at least one of actual vehicle acceleration and a wheel speed difference;
- comparing said at least one of said actual vehicle
  acceleration and said wheel speed difference to at least one of a
  predetermined vehicle acceleration and a predetermined wheel speed
  difference to detect vehicle wheel slip; and

reducing wheel torque in response to said detected wheel 10 slip.

2. The method of claim 1 wherein said comparing step further includes:

detecting a wheel speed acceleration; and comparing said wheel speed acceleration to a predetermined wheel speed acceleration to detect wheel slip.

3. The method of claim 1 further comprising:

comparing a non-driven wheel speed to a threshold nondriven wheel speed value and a trans throttle value to a threshold
throttle value to obtain a comparison result; and

5 selecting a wheel slip detection method based on said comparison result.

- 4. The method of claim 1 wherein said step of reducing wheel torque comprises accessing a table of torque reduction values based on input pulley speed and at least one of an acceleration error and a wheel speed difference.
  - The method of claim 1 further comprising:specifying a transmission speed ratio based on a current

providing a line pressure in the transmission based on the specified speed ratio.

vehicle speed; and

6. The method of claim 1 further comprising:

determining a first torque reduction amount based on at least one of acceleration error and input pulley speed;

determining a second torque reduction amount based on at

least one of input pulley speed and speed difference between driven

and non-driven wheels; and

reducing wheel torque using a lesser of the reduction amounts.

7. A method of controlling traction in a vehicle having at least one non-driven wheel speed sensor, the method comprising: detecting a non-driven wheel speed and a trans throttle position; 5 comparing said non-driven wheel speed and said trans
throttle position to a predetermined non-driven wheel speed and a
predetermined trans throttle position; and

selecting one of a plurality of wheel slip detection methods based on said comparing step.

- 8. The method of claim 7 further comprising performing said plurality of wheel slip detection methods.
- 9. The method of claim 7 wherein a first wheel slip detection method detects a speed difference of driven and non-driven wheels and compares said speed difference of driven and non-driven wheels to a predetermined difference, and wherein a second wheel slip detection method detects vehicle acceleration and compares said vehicle acceleration to a predetermined vehicle acceleration.
- 10. The method of claim 9 wherein comparing said speed difference further includes:

detecting a driven wheel speed acceleration; and comparing said driven wheel speed acceleration to a predetermined driven wheel speed acceleration.

5

5

11. The method of claim 7, further comprising applying a torque reduction to a wheel based on said selected wheel slip detection method.

- 12. The method of claim 7 further comprising reducing a wheel torque based on a result of the selected wheel slip detection method.
- 13. The method of claim 12 wherein reducing a wheel torque comprises using an input pulley speed and a speed difference between driven and non-driven wheels to define a torque reduction.
- 14. The method of claim 12 wherein reducing a wheel torque comprises using an acceleration error and an input pulley speed to define a torque reduction.
- 15. A vehicle having at least one non-driven wheel speed sensor and comprising a processor configured to control traction, the processor configured to:

detect at least one of vehicle acceleration and a wheel speed difference;

compare at least one of said vehicle acceleration and said wheel speed difference to at least one of a predetermined vehicle acceleration and a predetermined wheel speed difference to detect vehicle wheel slip; and

reduce wheel torque in response to said detected wheel slip.

10

16. The vehicle of claim 15 wherein the processor is further configured to:

detect a wheel speed acceleration; and
compare said wheel speed acceleration to a predetermined
wheel speed acceleration to detect wheel slip.

17. The vehicle of claim 15 wherein the processor is further configured to:

compare a non-driven wheel speed to a threshold non-driven wheel speed value and a trans throttle value to a threshold throttle value to obtain a comparison result; and

select a wheel slip detection method based on said comparison result.

5

- 18. The vehicle of claim 15 wherein the processor is further configured to access a table of torque reduction values based on input pulley speed and one of an acceleration error and a wheel speed difference.
- 19. The vehicle of claim 15 wherein the processor is further configured to:

specify a transmission speed ratio based on a current vehicle speed; and

specified speed ratio.

20. The vehicle of claim 15 wherein the processor is further configured to:

determine a first torque reduction amount based on at least one of acceleration error and input pulley speed;

determine a second torque reduction amount based on at least one of input pulley speed and speed difference between driven and non-driven wheels; and

5

reduce wheel torque using a lesser of the reduction amounts.